

The embodiments of the invention for which as exclusive privilege and property right is claimed are defined as follows:

1. A high volume electrolytic water treatment system for treating influent wastewater and removing both complex and variable contaminate compositions found in the influent wastewater, the system comprising:

a primary influent surge tank with electrocoagulation electrodes mounted therein, said electrodes connected to a power source, said electrodes for destabilizing materials found in the wastewater received inside said primary influent surge tank; and

a first flow-through module with electrocoagulation electrodes mounted therein, said electrodes connected to a power source, said electrodes for further treating the influent wastewater received inside said first flow-through module and removing contaminates found therein, said first flow-through module connected to and downstream from said primary surge tank for receiving the pretreated wastewater therefrom.

2. The system as described in claim 1 further including a secondary influent surge tank with electrocoagulation electrodes mounted therein, said electrodes connected to a power source, said electrodes for further destabilizing materials found in the wastewater received inside said secondary influent surge tank, said secondary influent surge tank connected to and between said first influent surge tank and said first flow-through module.

3. The system as described in claim 1 further including a second flow-through module with electrocoagulation electrodes mounted therein, said electrodes connected to a power source, said electrodes for further treating the influent wastewater received inside said second flow-through module and removing contaminants found therein, said second flow-through module connected to and downstream from said primary surge tank.

4. The system as described in claim 1 further including a foam removal tank with vacuum connected to and downstream from said first flow-through module, said vacuum for removing foam and floating sludge from the treated water in said foam removal tank.

5. The system as described in claim 4 further including a clarifier connected to and downstream from said foam removal tank, said clarifier for allowing sufficient dwell time for floc in clarified influent water to come together in large enough and stable enough pieces to settle to a bottom of said clarifier.

6. The system as described in claim 1 further including a headworks screen connected to and upstream from said primary influent surge tank, said headworks screen for screening solids suspended in the influent wastewater prior to receipt of the wastewater inside said primary influent surge tank.

7. A high volume electrolytic water treatment system for treating influent wastewater and removing both complex and variable contaminate compositions found in the influent wastewater, the system comprising:

a primary influent surge tank with electrocoagulation electrodes suspended therein, said electrodes connected to a power source for providing alternating current thereto, said electrodes for destabilizing materials found in the wastewater received inside said primary influent surge tank; and

a first flow-through module with electrocoagulation electrodes disposed therein, said electrodes connected to a power source for providing alternating current thereto, said electrodes for further treating the influent wastewater received inside said first flow-through module and removing contaminants found therein, said first flow-through module connected to and downstream from said primary influent surge tank.

8. The system as described in claim 7 further including a secondary influent surge tank with electrocoagulation electrodes suspended therein, said electrodes connected to a power source for providing alternating current thereto, said electrodes for further destabilizing materials found in the wastewater received inside said secondary influent surge tank, said secondary influent surge tank connected to and between said first influent surge tank and said first flow-through module.

9. The system as described in claim 7 further including a second flow-through module with electrocoagulation electrodes disposed therein, said electrodes connected to a power source for providing alternating current thereto, said electrodes for further treating the influent wastewater received inside said second flow-through module and removing contaminants found therein, said second flow-through module connected to and downstream from said secondary surge tank.

10. The system as described in claim 9 further including a foam removal tank with vacuum connected to and downstream from said first flow-through module and said second flow-through module, said vacuum for removing foam and floating sludge from the treated water in said foam removal tank.

11. The system as described in claim 10 further including a dewatering basket filter connected to said vacuum for receiving the foam and floating sludge from said foam removal tank.

12. The system as described in claim 11 further including a supernate collection pan disposed below said dewatering basket filter for receiving filtered water therefrom.

13. The system as described in claim 10 further including a clarifier connected to and downstream from said foam removal tank, said clarifier for allowing sufficient dwell time for floc in clarified influent water to come together in large enough and stable enough pieces to settle to a bottom of said clarifier, said clarifier having an effluent weir mounted therein for receiving and discharging clear water from said clarifier.

14. A process for treating influent wastewater and removing both complex and variable contaminate compositions found in the influent wastewater, the process using a primary influent surge tank with electrocoagulation electrodes connected to a power source and a first flow-through module with electrocoagulation electrodes mounted therein and connected to a power source, the steps comprising:

introducing the influent wastewater into the primary influent surge tank and treating the wastewater water using the electrocoagulation electrodes and destabilizing suspended materials found therein; and

introducing the pretreated wastewater from the primary influent surge tank into the first flow-through module and further treating the influent wastewater and removing contaminates found therein; and

discharging the treated wastewater from the first flow-through module.

15. The process as described in claim 14 further including the step of introducing the pretreated wastewater from the primary influent surge tank into a secondary influent surge tank with electrocoagulation electrodes connected to a power source, the second influent surge tank further treating the influent wastewater and removing contaminates found therein prior to introducing the pretreated wastewater into the first flow-through module.

15. The process as described in claim 14 further including the step of introducing the pretreated wastewater from the primary influent surge tank into a second flow-through module and further treating the influent wastewater and removing contaminates found therein and discharging the treated wastewater from the second flow-through module.

16. The process as described in claim 14 further including the step of discharging the treated wastewater from the first flow-through module into a foam removal tank with vacuum, the vacuum used for removing foam and floating sludge from the treated water in the foam removal tank.

17. The process as described in claim 16 further including the step of introducing the treated wastewater from the foam removal tank into a clarifier and allowing sufficient dwell time for floc in clarified influent water to come together in large enough and stable enough pieces to settle to a bottom of the clarifier.

18. The process as described in claim 14 further including the step of first introducing the influent wastewater into a headworks screen for screening solids suspended in the influent wastewater prior to introducing the wastewater inside the primary influent surge tank.

10050371.01.1B02